

Application SN 10/656,661
Amendment dated December 20, 2006
Reply to Office Action of October 17, 2006

Amendments to the Claims:

Please replace all prior versions of the claims with the following claims:

1. (withdrawn) A system for fabricating polymer microparticles, comprising:

- (a) a stamp, wherein said stamp further comprises micro-structures on at least one side of said stamp for receiving a layer of said polymer;
- (b) a substrate; and
- (c) a layer of dissolvable material covering said substrate.

2. (withdrawn) The system of claim 1, further comprising a compression means for compressing said stamp against said substrate.

3. (withdrawn) The system of claim 1, further comprising a solvent for dissolving said layer of dissolvable material.

4. (withdrawn) The system of claim 3, further comprising a reservoir for said solvent.

5. (withdrawn) The system of claim 1, wherein said polymer is polypropyl methacrylate, polylactic-co-glycolic acid, polycaprolactone, polymethyl methacrylate, or polystyrene.

6. (withdrawn) The system of claim 1, wherein said stamp is a polydimethyl siloxane stamp.

7. (withdrawn) The system of claim 1, wherein said micro-structures further comprise a plurality of micro-pillars.

8. (withdrawn) The system of claim 1, wherein said micro-structures further comprise a plurality of micro-wells.

9. (withdrawn) The system of claim 1, wherein said substrate is a glass slide.

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10. (withdrawn) The system of claim 1, wherein said layer of dissolvable material further comprises polyvinyl alcohol.

11. (withdrawn) The system of claim 1, wherein said layer of dissolvable material further comprises a water soluble ink, glucose, chitosan, or polyethylene glycol.

12-36 (cancelled)

37. (currently amended) ~~The process of claim 36, wherein~~ A process for producing multiple, generally flat, uncombined, thermoplastic polymer microparticles having predetermined lateral shapes, the process comprising

- (1) forming an array of free-standing polymer microparticles by soft lithography on the sacrificial layer of a substrate comprising a base layer and a sacrificial layer on the base layer, the thermoplastic polymer microparticles are produced being formed by
- applying a solution of a polymer to the patterned face of an elastomeric stamp defining a pattern of micro-pillars and micro-wells to form a thin continuous coating of the polymer on the patterned face, and
 - contacting the polymer-coated face of the stamp with the sacrificial layer of the substrate so that the polymer on the micro-pillars ~~or in the micro-wells~~ transfers to the sacrificial layer, thereby forming the free-standing polymer microparticles on the sacrificial layer,
- (2) dissolving the sacrificial layer in the a liquid, thereby releasing the multiple, free-standing, uncombined polymer microparticles into the liquid, and
- (3) recovering the free-standing polymer microparticles from the liquid.

38. (previously presented) The process of claim 37, wherein the polymer is at least one of polypropyl methacrylate, polylactic-co-glycolic acid, polycaprolactone, polymethyl methacrylate, polystyrene, polymethacrylic acid and sulfonated polyaniline.

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39. (previously presented) The process of claim 38, wherein the sacrificial layer is made from at least one of polyvinyl alcohol, a water soluble ink, glucose, chitosan, or polyethylene glycol.

40. (previously presented) The process of claim 39, wherein the sacrificial layer is made from polyvinyl alcohol.

41. Cancelled.

42. (currently amended) ~~The process of claim 37, wherein the polymer~~ A process for producing multiple, generally flat, uncombined, thermoplastic polymer microparticles having predetermined lateral shapes, the process comprising

- (1) forming an array of free-standing polymer microparticles by soft lithography on the sacrificial layer of a substrate comprising a base layer and a sacrificial layer on the base layer, the thermoplastic polymer microparticles being formed by
 - applying a solution of a polymer to the patterned face of an elastomeric stamp defining a pattern of micro-pillars and micro-wells to form a thin continuous coating of the polymer on the patterned face,
 - removing the polymer on the micro-pillars, and
 - contacting the polymer-coated face of the stamp with the sacrificial layer of the substrate so that the polymer in the micro-wells is transferred transfers to the sacrificial layer, thereby forming the free-standing polymer microparticles on the sacrificial layer,
- (2) dissolving the sacrificial layer in a liquid, thereby releasing the multiple, free-standing, uncombined polymer microparticles into the liquid, and
- (3) recovering the free-standing polymer microparticles from the liquid.

43. (previously presented) The process of claim 42, wherein multiple layers of different polymers are formed in the micro-wells.

44. Cancelled

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45. (previously presented) The process of claim 37, wherein the free-standing polymer microparticles are recovered from the liquid by desiccating or filtering.

46. (previously presented) The process of claim 37, wherein the liquid is water.

47. (previously presented) The process of claim 37, wherein the elastomeric material is polydimethyl siloxane